

CONTRACT

SPECIAL PROVISIONS

CSI-Inch/Pound

Project No: SP-0073(8)34

Name: SR-73; RP 34 TO RP 36, UTAH CO.

MINOR WIDENING

County: UTAH

Bid Opening: August 12, 2003

Date



2002 - U.S. Standard Units (Inch-Pound Units) June 3, 2003

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I. 2002 Standard Specifications

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units) CSI Format, Edition of 2002 with Changes One and Two included applies on this project as a static Specification Book.

Refer to Part II (List of Revised Standard Specifications) and Part XIV (Special Provisions) for other project specific specifications.

II. List of Revised Standard Specifications

Change One – Included in 2002 Standard Specifications

Revised August 29, 2002

Section 00570 Articles 1.2 A 69, A 71 b (deleted)
Section 00727 Articles 1.1 D; 1.5 B; 1.9; 1.10; 1.16 B, C; 1.18 B
Section 01574 Articles 1.2 B
Section 02721 Articles 1.2 D (added), H (replaced), I (deleted); 1.6 B1; 2.1 A Table 3; 3.2 C
Section 02741 Articles 3.8 E 2 a, b
Section 02821 Articles 3.1 A
Section 02892 Articles 1.5 A, B
Section 02936 Articles 1.4; 1.5 C
Section 03152 Articles 1.2 P, Q; 2.2 A, B
Section 05120 Articles 1.4 A (deleted), 3.3 A
Section 16525 Articles 1.6 A, B

Change Two – Included in 2002 Standard Specifications

Revised December 19, 2002

Section 01561 Article 3.1 A
Section 02075 Article 2.7 A
Section 02372 Article 2.1 A 4
Section 02455 Article 3.3 B 2
Section 02785 Article 3.2 C
Section 02861 Article 3.3 A
Section 03055 Articles 1.2 P (inserted), 2.3 B, 2.4 (deleted), 2.7 A 1 a-e (added), 2.7 B 2 (added), 2.8 A 1 a, 2.8 A 2 (deleted), 2.9 A3, 3.2 A Table, 3.2 C, 3.7 A 3, 3.8 C 1, 3.9 A-B, 3.10, 3.11 B 1, 3.11 B 3
Section 07922 Article 2.1 Table 1

Change Three

Revised February 27, 2003

Section 01355 Article 1.3 A 3

Section 01721 1.4 C deleted and moved to Measurement and Payment document

Section 02222 Changed title from Site Demolition-Pavement to Site Demolition - Concrete, A, 3.2 Title, 3.2 A

Section 02224 New Specification

Section 02316 1.2 A, D, I added, 1.3 added, 1.7 B, C, D, E, F, G added, 3.9 A added

Section 02455 3.3 B 2 (corrected error from change two)

Section 02721 1.2 Related Sections added, 1.3 H and I added, 1.7 B, 1.7 F deleted, 2.1 B added, 2.2 deleted, 3.1 Title changed, 3.2 B reference added, 3.2 E added

Section 02741 1.4 C6a added, 1.4 H, Table 3, 2.4 A, 2.4 C, Table 9, 2.5 B 1-3, 2.5 B 4 added, 2.5 D, 3.1 A1 deleted, 3.2 C3 added, 3.7 D1, 3.9 B4, 3.9 B5 added, 3.9 E note added

Section 02744 Entire Section deleted

Section 02745 1.4 A9

Section 02785 1.2 C and D added

Section 02892 Added Articles, 1.3 N, O, Y, 1.5 D, 2.4 I, 2.5 C, D, E, 2.6 B3 - B6, 2.6 C, 2.16, 2.17, 3.11 and Revised Articles 3.5 F and Table Number, 3.5 G and Table Number

Section 02896 2.1 A, B and 3.1 A drawing number corrected

Section 16525 1.2 H

Change Four

Revised April 24, 2003

Section 00555 1.18 added Table 1

Section 01280 1.2 K

Section 01282 1.13 B added, 1.13 G 2 deleted

Section 02222 1.2 B Title Changed

Section 02231 3.5 A

Section 02705 Title Changed, 1.1 A, 1.3 added, 3.1 Title changed, 3.1 A, 3.1 D moved, 3.2 added

Section 02741 3.7 B

Section 02747 Entire Section deleted

Section 02752 1.8 E 1

Section 02753 3.1 D 5 a, 3.3 D

Section 02842 2.4A

Section 02861 2.1 I

Section 02911 3.2 A 1

Section 02931 3.2 B

Section 03392 2.1 A 8-9

Section 03921 2.1 A 1, 2.1 C

Section 03922 2.1 B 1-2

Section 03923 2.1 A-B, 3.1 B

Section 03924 2.2 A-B

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Section 03935 2.1 A, 2.1 A 2

Section 07105 2.3 A

Section 13553 1.2 C Title Changed

Section 13554 1.1 A, 1.3 C and D added, 2.1 A, 2.1 F, 2.2 D 1, 2.2 D 2 deleted, 2.2 E, 2.2 H, 2.2 H 2, 2.2 H 3 deleted and renumbered, 3.1 B 3 added, 3.1 I

III. List of Revised Standard Drawings

Change One

Revised December 19, 2002

AT 7	Polymer Concrete Junction Box Details	12/19/2002
BA 1A	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 1B	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 3	Cast In Place Constant Slope Barrier	12/19/2002
BA 4B	Beam Guardrail Installations	12/19/2002
BA 4C	Beam Guardrail Anchor Type I	12/19/2002
CC 6	Crash Cushion Type E Sand Barrel Details	12/19/2002
DG 3	Maximum Fill Height and End Sections for HDPE And PVC Pipes	12/19/2002
DG 4	Pipe Culverts Minimum Cover	12/19/2002
EN 4	Temporary Erosion Control (Drop-Inlet Barriers)	12/19/2002
GW 1	Raised Median and Plowable End Section	12/19/2002
PV 2	Pavement Approach Slab Details	12/19/2002
SL 13	Traffic Counting Loop Detector Details	12/19/2002
SN 2	Flashing School Sign	12/19/2002
SN 4	Flashing Stop Sign	12/19/2002
SN 5	Typical Installation For Milepost Signs	12/19/2002
SN 8	Ground Mounted Timber Sign Post (P1)	12/19/2002
ST 1	Object Marker "T" Intersection and Pavement Transition Guidance	12/19/2002
ST 7	Pavement Markings and Signs at Railroad Crossings	12/19/2002
SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/2002
SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/2002
SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/2002

Change Two

Revised February 27, 2003

GW 2	Concrete Curb and Gutter	02/27/2003
GW 5	Pedestrian Access	02/27/2003

Change Three

Revised April 24, 2003

AT 7	Polymer-Concrete Junction Box Details	04/24/2003
CB 2	Curb Inlet Catch Basin	04/24/2003
CC 7	Grading & Installation Details Crash Cushion Type F	04/24/2003
CC 8	Grading & Installation Details Crash Cushion Type G	04/24/2003
CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
EN 2	Temporary Erosion Control (Silt Fence)	04/24/2003
GW 2	Concrete Curb and Gutter	04/24/2003
SN 12B	Ground Mounted Sign Installation Details	04/24/2003

IV. Materials Minimum Sampling and Testing

Follow the requirements of the Current Materials Minimum Sampling and Testing Manual:

Materials Minimum Sampling and Testing Manual reference can be found from the UDOT Web Site at:

<http://www.dot.utah.gov/esd/Manuals/Materials/MaterialsSampling.htm>

**For UDOT employees the Manual can also be found on the Shared Drive at:
\Shared\Engineering Services\Manuals\Materials (W drive for the Complex
and R drive for the Regions)**

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V. Notice to Contractors



NOTICE TO CONTRACTORS

Sealed proposals will be received by the Utah Department of Transportation UDOT/DPS Building (4th Floor), 4501 South 2700 West, Salt Lake City, Utah. 84114-8220, until 2 o'clock p.m. Tuesday, August 12, 2003, and at that time the download process of bids from the USERTrust Vault to UDOT will begin, with the public opening of bids scheduled at 2:30 for MINOR WIDENING of SR-73; RP 34 TO RP 36, UTAH CO. in UTAH County, the same being identified as State Project No: SP-0073(8)34.

Federal Regulations:

Wage Rate Non-Applicable.

Project Location: 2.06 Miles of Route: 0073 from R.P. 34.40 to R.P. 36.46

The principal items of work are as follows (for all items of work see attachment):

HMA - 3/4 inch
Granular Borrow
Untreated Base Course 3/4 inch or 1 inch Max (Plan Quantity)

The project is to be completed: in 40 Working Days.

Other Requirements:

All project bidding information, including Specifications and Plans, can be viewed, downloaded, and printed from UDOT's Project Development Construction Bid Opening Information website, <http://www.dot.utah.gov/cns/bidopeninfo.htm>. To bid on UDOT projects, bidders must use UDOT's Electronic Bid System (EBS). The EBS software and EBS training schedules are also available on this website.

Project information can also be reviewed at the main office in Salt Lake City, its Region offices, and its District offices in Price, Richfield, and Cedar City.

Project Plans cannot be downloaded or printed from the website unless your company is registered with UDOT. Go to UDOT's website to register. Unregistered companies may obtain a **CD**, that contains the Specifications and Plans, from the main office, 4501 South 2700 West, Salt Lake City, (801) 965-4346, for a fee of \$20.00, plus tax and mail charge, if applicable, none of which will be refunded.

Prequalification of bidders is required. Prior to submitting a bid, the bidder must have on file with the Utah Department of Transportation a completed and approved contractor's application for prequalification. Department processing time is 10 working days from receipt of properly executed documentation.

As required, a contractor's license must be obtained from the Utah Department of Commerce.

Each bidder must submit a bid bond from an approved surety company on forms provided by the Department; or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to the Utah Department of Transportation, showing evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and furnish the contract bonds as required.

The right to reject any or all bids is reserved.

If you need an accommodation under the Americans with Disabilities Act, contact the Construction Division at (801) 965-4346. Please allow three working days.

Additional information may be secured at the office of the Utah Department of Transportation, (801) 965-4346.

Dated this 19th day of July, 2003.

UTAH DEPARTMENT OF TRANSPORTATION
John R. Njord, Director

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VI. EQUAL OPPORTUNITY (STATE PROJECTS)

Selection of Subcontractors, Service Providers, Procurement of Materials and Leasing of Equipment:

Do not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

Notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. Use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Obtain lists of DBE construction firms from SHA personnel.

Use best efforts to ensure subcontractor compliance with their EEO obligations.

Selection of Labor:

During the performance of this contract, do not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

Do not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. Take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action includes, but is not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Department of Transportation setting forth the provisions of this nondiscrimination clause.

In all solicitations or advertisements for employees state that all qualified applicants receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

Send to each labor union or representative of workers that the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Department of Transportation advising the said labor union or worker' representative of the commitments under this section and post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

Include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. Take such action with respect to any subcontract or purchase order as the State Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance.

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VII. Bidding Schedule

Utah Department of Transportation

Bidder's Schedule

Bid Opening Date: 8/12/2003

Project Number: SP-0073(8)34

Project Name: SR-73; RP 34 TO RP 36, UTAH CO.

Description: MINOR WIDENING

Funding: STATE

Region: REGION 3

County: UTAH

#	Item	Description	Quantity	Unit
10 - ROADWAY				
1	012850010	Mobilization	1	lump sum
2	013150010	Public Information Services	1	lump sum
3	015540005	Traffic Control	1	lump sum
4	01554007*	Portable Variable Message Sign	8	device day
5	015710020	Check Dam (Stone)	3	cubic yard
6	015720020	Dust Control and Watering	1200	1000 gallons
7	017210010	Survey (Specialty Item)	1	lump sum
8	018910010	Move Street Sign	1	each
9	018910020	Move Mailbox	4	each
10	020560015	Granular Borrow	10500	cubic yard
11	022210095	Remove Pipe Culvert	615	foot
12	02221010*	Remove Delineator	72	each
13	022220040	Remove Asphalt Pavement	30	square yard
14	023160020	Roadway Excavation (Plan Quantity)	12000	cubic yard
15	026100004	18 inch Pipe Culvert, Class A	225	foot
16	026100006	24 inch Pipe Culvert, Class A	390	foot
17	027050010	Asphalt Pavement Sawing	79320	inch-foot
18	02721008P	Untreated Base Course 3/4 inch or 1 inch Max (Plan Quantity)	5350	cubic yard
19	02723000*	Shoulder Grading	700	cubic yard
20	027410060	HMA - 3/4 inch	5870	ton
21	027480010	Liquid Asphalt MC-70 or MC-250	160	ton
22	027480040	Emulsified Asphalt CSS-1	70	ton
23	027650020	Pavement Message Paint	3	each
24	027650050	Pavement Marking Paint	156	gallon
25	028410010	Beam Guardrail	1300	foot
26	028410040	Precast Concrete Barrier	475	foot
27	028410070	Barrier Reflector	50	each
28	028420010	Delineator Type I	25	each
29	028420030	Delineator - Culvert Marker	12	each
30	028420040	Delineator - Maintenance Marker	10	each
31	028430030	Crash Cushion Type F	3	each
32	028430045	Marker Post and Mounting Hardware	3	each
33	028430050	Object Marker Sheeting or Marker Plate Hardware	3	each
34	028910010	Relocation of Sign	7	each
35	02911001P	Wood Fiber Mulch (Plan Quantity)	3	acre
36	02912004P	Strip and Spread Topsoil (Plan Quantity)	16500	square yard
37	02922001P	Drill Seed (Plan Quantity)	3	acre

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Measurement and payment. Read all related documents carefully.

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VIII. Measurement and Payment

MEASUREMENT AND PAYMENT

The Department will measure and pay for each bid item as detailed in this section.
Payment is contingent upon acceptance by the Department.

Items are listed by Specification and in tables as follows:

Item #	Bid item number	Bid Item Name	Unit of measurement and payment
Additional information goes here.			

1	012850010	Mobilization	Lump sum
	Payment	Amount Paid	When Paid
	First	The lesser of 25% of Mobilization or 2.5% of contract	With first estimate
	Second	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 5% of contract
	Third	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 10% of contract
	Fourth	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 20% of contract
	Final	Amount bid in excess of 10% of contract price.	Project Acceptance-Final

2	013150010	Public Information Services	Lump Sum
	Payment	Amount Paid	When Paid
	One	25% of bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

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3	015540005	Traffic Control	Lump Sum
	Payment	Amount Paid	When Paid
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

4	01554007*	Portable Variable Message Sign	Device day
A. Deduct all Department costs of corrective action against monies due to Contractor. B. Device day: The number of devices used to control, direct, or warn traffic per calendar day or part of a calendar day.			

5	015710020	Check Dam (Stone)	Cubic yard
In place, per structure			

6	015720020	Dust Control and Watering	1000 Gallon
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7	017210010	Survey (Specialty Item)	Lump sum
	Payment	Amount Paid	When Paid
	First	25% of the bid item amount	When the project is 5% complete
	Second	A total of 40% of bid item amount	When the project is 10% complete
	Third	A total of 75% of bid item amount	When the project is 50% complete
	Fourth	A total or 90% of bid item amount	When the project is 75% complete
	Fifth	The Department retains the remaining 10% of bid item amount until the projected completion and all surveying and design data "as staked/constructed" drawings in Microstation format clearly showing all final dimensions, lines, grades, tie-ins, and elevations from contract plans are returned to the Engineer.	

8	018910010	Move Street Sign	Each
In place			

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9	018910020	Move Mailbox	Each
In place, Department will not pay for temporary mailbox installation or removal.			

10	020560015	Granular Borrow	Cubic Yard
Computed by average end area of plan typical sections.			

11	022210095	Remove Pipe Culvert	Feet
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12	02221010*	Remove Delineator	Each
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13	022220040	Remove Asphalt Pavement	Square yard
<p>Regardless of the depth or number of courses encountered.</p> <p>A. Do not measure discontinued roads within the limits of the new roadbed or roads that are disturbed in performing other items of work.</p> <p>B. Department will pay for material placed to cover pavements or fill depressions under "Roadway Excavation," or "Borrow."</p> <p>C. Quantity measured and paid is excluded from measurement and payment under "Roadway Excavation".</p> <p>D. Department will pay for concrete curb and concrete curb and gutter integral to the concrete pavement to be removed under "Remove Concrete Pavement."</p>			

14	023160020	Roadway Excavation (Plan Quantity)	Cubic yard
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15	026100004	18 inch Pipe Culvert, Class A	Feet
Measured parallel to the center line from barrel end to barrel end, in place.			

16	026100006	24 inch Pipe Culvert, Class A	Feet
Measured parallel to the center line from barrel end to barrel end, in place.			

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17	027050010	Asphalt Pavement Sawing	Inch-feet
Measurement: Average depth in inches times length in feet. Payment: When no depth is shown, payment will be based on a depth of 6 inches. If the average depth exceeds the plan depth by 2 inches or more, the unit price will increase by 20 percent.			

18	02721008P	Untreated Base Course 3/4 inch or 1 inch Max (Plan Quantity)	Cubic yard
Computed by average end area of plan typical sections.			

19	02723000*	Shoulder Grading	Cubic yard
Computed by average end area of plan typical sections.			

20	027410060	HMA - 3/4 inch	Ton
Includes aggregates, asphalt binder, hydrated lime, other additives, etc. The Department will not pay separately for asphalt binder, hydrated lime, additives, etc.			

21	027480010	Liquid Asphalt MC-70 or MC-250	Ton
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22	027480040	Emulsified Asphalt CSS-1	Ton
Do not measure water added in excess of the specified amount in Standard Specification 02745.			

23	027650020	Pavement Message Paint	Each
In place, measurement - Painted Pavement Messages: A. Letter = one message. B. Arrow = one message. C. Multi-headed arrow = one message per arrow. D. School crossbars = one message per 24 inch x 10 ft bar. E. Crosswalk = two message per lane and two messages per shoulder. F. Stop Bar = one message per lane and one message per shoulder. G. Railroad crossing markings = seven messages per lane. 1. 'R' = one message each (two required). 2. 'X' = two messages. 3. Transverse Bar = one message each (two required). 4. Stop Bar = one message. Payment: A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.			

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24	027650050	Pavement Marking Paint	Gallon
In place, Payment: A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.			

25	028410010	Beam Guardrail	Feet
In place			

26	028410040	Precast Concrete Barrier	Feet
In place			

27	028410070	Barrier Reflector	Each
In place			

28	028420010	Delineator Type I	Each
In place			

29	028420030	Delineator - Culvert Marker	Each
In place			

30	028420040	Delineator - Maintenance Marker	Each
In place			

31	028430030	Crash Cushion Type F	Each
In place			

32	028430045	Marker Post and Mounting Hardware	Each
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33	028430050	Object Marker Sheeting or Marker Plate Hardware	Each
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34	028910010	Relocation of Sign	Each
In place, includes removal and disposal of existing concrete sign base.			

35	028910170	Sign Type P-1, 30 inch X 30 inch	Each
In place			

36	02911001P	Wood Fiber Mulch (Plan Quantity)	Acre
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37	02912004P	Strip and Stockpile Topsoil (Plan Quantity)	Square Yard
In stockpile			

38	02922001P	Drill Seed (Plan Quantity)	Acre
In place			

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IX. PDBS Project Summary Report

Summary Report
Project: SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

Detail	Alt Group	Alt #	Description	Qty	Unit
10 - ROADWAY	0	0			
Item Number	Description		Qty	Unit	
012850010	Mobilization		1	Lump	
013150010	Public Information Services		1	Lump	
015540005	Traffic Control		1	Lump	
01554007*	Portable Variable Message Sign		8	Dev'd	
015710020	Check Dam (Stone)		3	cu yd	
015720020	Dust Control and Watering		1,200	1000 gal	
017210010	Survey (Specialty Item)		1	Lump	
018910010	Move Street Sign		1	Each	
018910020	Move Mailbox		4	Each	
020560015	Granular Borrow		10,500	cu yd	
022210095	Remove Pipe Culvert		615	ft	
02221010*	Remove Delineator		72	Each	
022220040	Remove Asphalt Pavement		30	sq yd	
023160020	Roadway Excavation (Plan Quantity)		12,000	cu yd	
026100004	18 inch Pipe Culvert, Class A		225	ft	
026100006	24 inch Pipe Culvert, Class A		390	ft	
027050010	Asphalt Pavement Sawing		79,320	in-ft	
02721008P	Untreated Base Course 3/4 inch or 1 inch Max (Plan Quantity)		5,350	cu yd	
02723000*	Shoulder Grading		700	cu yd	
027410060	HMA - 3/4 inch		5,870	Ton	
027480010	Liquid Asphalt MC-70 or MC-250		160	Ton	
027480040	Emulsified Asphalt CSS-1		70	Ton	
027650020	Pavement Message Paint		3	Each	
027650050	Pavement Marking Paint		156	gal	
028410010	Beam Guardrail		1,300	ft	
028410040	Precast Concrete Barrier		475	ft	
028410070	Barrier Reflector		50	Each	
028420010	Delineator Type I		25	Each	
028420030	Delineator - Culvert Marker		12	Each	

Summary Report
Project: SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

Detail	Alt Group	Alt #	Description		
10 - ROADWAY	0	0			
Item Number	Description		Qty	Unit	
028420040	Delineator - Maintenance Marker		10	Each	
028430030	Crash Cushion Type F		3	Each	
028430045	Marker Post and Mounting Hardware		3	Each	
028430050	Object Marker Sheeting or Marker Plate Hardware		3	Each	
028910010	Relocation of Sign		7	Each	
02911001P	Wood Fiber Mulch (Plan Quantity)		3	Acre	
02912004P	Strip and Spread Topsoil (Plan Quantity)		16,500	sq yd	
02922001P	Drill Seed (Plan Quantity)		3	Acre	

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X. PDBS Detailed Stationing Summaries Report

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY

Alt Group: 0 Alt #: 0

Item Number	Description					Use Qty	Unit
01554007*	Portable Variable Message Sign					8	Dev•d
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.40	LT			4.0	Place at beginning of project	
SR-73	RP 36.46	LT			4.0	Place at end of project, at SR-68 Jct.	
					8.0		
015710020	Check Dam (Stone)					3	cu yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.0	LT			1.0	Top of cut ditch at inlet of 5' pipe culvert	
SR-73	RP 35.23	LT			1.0	Top of cut ditch at inlet of 7' pipe culvert	
SR-73	RP 36.37	LT			1.0	Cut ditch at inlet of existing pipe culvert	
					3.0		
015720020	Dust Control and Watering					1,200	1000 gal
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	1,200.0		
					1,200.0		
Note #	Note						
1	Granular Borrow = 42 gals/cu yd Untreated Base Course = 51 gals/cu yd						
018910010	Move Street Sign					1	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.46	LT			1.0	11600 West Street	
					1.0		
018910020	Move Mailbox					4	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.88	LT			1.0		
SR-73	RP 36.18	LT			2.0		
SR-73	RP 36.38	LT			1.0		
					4.0		

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description					Use Qty	Unit
020560015	Granular Borrow					10,500	cu yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	10,500.0		
					10,500.0		
Note #	Note						
1	133 lbs/cu ft						
022210095	Remove Pipe Culvert					615	ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT			35.0		
SR-73	RP 35.46	LT			60.0		
SR-73	RP 35.70	LT			35.0		
SR-73	RP 35.72	LT			120.0		
SR-73	RP 35.77	LT			35.0		
SR-73	RP 35.88	LT			40.0		
SR-73	RP 35.93	LT			35.0		
SR-73	RP 35.96	LT			35.0		
SR-73	RP 36.09	LT	RP 36.10	LT	105.0		
SR-73	RP 36.25	LT			35.0		
SR-73	RP 36.29	LT			35.0		
SR-73	RP 36.34	LT			45.0		
					615.0		
Note #	Note						
1	See driveway detail (DT-3)						
02221010*	Remove Delineator					72	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.40	LT & RT	RP 36.46	LT & RT	12.0	Culvert Markers	
SR-73	RP 34.40	LT & RT	RP 36.46	LT & RT	10.0	Maintenance Markers	
SR-73	RP 34.40	LT & RT	RP 36.46	LT & RT	50.0	Delineators	
					72.0		
022220040	Remove Asphalt Pavement					30	sq yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.78	LT			30.0	Wide asphalt driveway	
					30.0		

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY

Alt Group: 0 Alt #: 0

Item Number	Description					Use Qty	Unit
023160020	Roadway Excavation (Plan Quantity)					12,000	cu yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	12,000.0		
					12,000.0		
026100004	18 inch Pipe Culvert, Class A					225	ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.77	LT			35.0		
SR-73	RP 35.88	LT			40.0		
SR-73	RP 35.96	LT			35.0		
SR-73	RP 36.25	LT			35.0		
SR-73	RP 36.29	LT			35.0		
SR-73	RP 36.34	LT			45.0		
					225.0		
026100006	24 inch Pipe Culvert, Class A					390	ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT			35.0		
SR-73	RP 35.46	LT			60.0		
SR-73	RP 35.70	LT			35.0		
SR-73	RP 35.72	LT			120.0		
SR-73	RP 35.93	LT			35.0		
SR-73	RP 36.09	LT	RP 36.10	LT	105.0		
					390.0		
027050010	Asphalt Pavement Sawing					79,320	in-ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.4	LT	79,320.0		
					79,320.0		
02721008P	Untreated Base Course 3/4 inch or 1 inch Max (Plan Quantity)					5,350	cu yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	5,350.0		
					5,350.0		

Note # Note
1 135 lbs/cu ft

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description					Use Qty	Unit
02723000*	Shoulder Grading					700	cu yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	RT	RP 36.40	RT	700.0		
					700.0		
027410060	HMA - 3/4 inch					5,870	Ton
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	5,870.0		
					5,870.0		
Note #	Note						
1	HMA mix = 149 lbs/cu ft. Asphalt Cement = 64-28 Hydrated Lime = 1% of HMA						
027480010	Liquid Asphalt MC-70 or MC-250					160	Ton
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	160.0		
					160.0		
Note #	Note						
1	0.30 gal/sq yd, 249 gal/ton						
027480040	Emulsified Asphalt CSS-1					70	Ton
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	70.0		
					70.0		
Note #	Note						
1	0.30 gal/sq yd, 240 gal/ton						
027650020	Pavement Message Paint					3	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73					2.0	RIGHT TURN ARROW; 11600 W. St. - Sheet DT-4	
SR-73					1.0	STOP BAR: 11600 West Street	
					3.0		

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY

Alt Group: 0 Alt #: 0

Item Number	Description					Use Qty	Unit
027650050	Pavement Marking Paint					156	gal
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57		RP 36.40		62.0	4" solid white	
SR-73	RP 34.57		RP 36.40		78.0	4" solid yellow/skip yellow	
SR-73	RP 34.57		RP 36.40		16.0	4" skip white	
					156.0		
028410010	Beam Guardrail					1,300	ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.39	LT	RP 35.61	LT	1,300.0		
					1,300.0		
028410040	Precast Concrete Barrier					475	ft
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.00	LT			240.0	See detail sheet DT-5	
SR-73	RP 35.23	LT			235.0	See detail sheet DT-6	
					475.0		
028410070	Barrier Reflector					50	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.00	LT			12.0	See detail sheet DT-5	
SR-73	RP 35.23	LT			12.0	See detail sheet DT-6	
SR-73	RP 35.39	LT	RP 35.61	LT	26.0	See detail sheet DT-6	
					50.0		
028420010	Delineator Type I					25	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	25.0		
					25.0		
028420030	Delineator - Culvert Marker					12	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.40	LT & RT	RP 36.46	LT & RT	12.0		
					12.0		

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY

Alt Group: 0 Alt #: 0

Item Number	Description					Use Qty	Unit
028420040	Delineator - Maintenance Marker					10	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.40	LT & RT	RP 36.46	LT & RT	10.0	Place in same locations as removed markers.	
					10.0		
028430030	Crash Cushion Type F					3	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.23	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.46	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.61	LT			1.0	See detail sheet DT-6	
					3.0		
028430045	Marker Post and Mounting Hardware					3	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.23	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.46	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.61	LT			1.0	See detail sheet DT-6	
					3.0		
028430050	Object Marker Sheeting or Marker Plate Hardware					3	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 35.23	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.46	LT			1.0	See detail sheet DT-6	
SR-73	RP 35.61	LT			1.0	See detail sheet DT-6	
					3.0		
028910010	Relocation of Sign					7	Each
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.58	LT			1.0	WARNING TRUCK CROSSING	
SR-73	RP 35.46	LT			1.0	STOP	
SR-73	RP 36.18	LT			1.0	WARNING DEER CROSSING NEXT 6 MILES	
SR-73	RP 36.20	LT			1.0	WARNING TRUCK CROSSING	
SR-73	RP 36.35	LT			1.0	Destination Sign	
SR-73	RP 36.39	LT			1.0	SR-73 WEST	
SR-73	RP-36.38	LT			1.0	SPEED LIMIT 65	
					7.0		

Detailed Report
SP-0073(8)34
SR-73; RP 34 TO RP 36, UTAH CO.

Version: 1

10 - ROADWAY

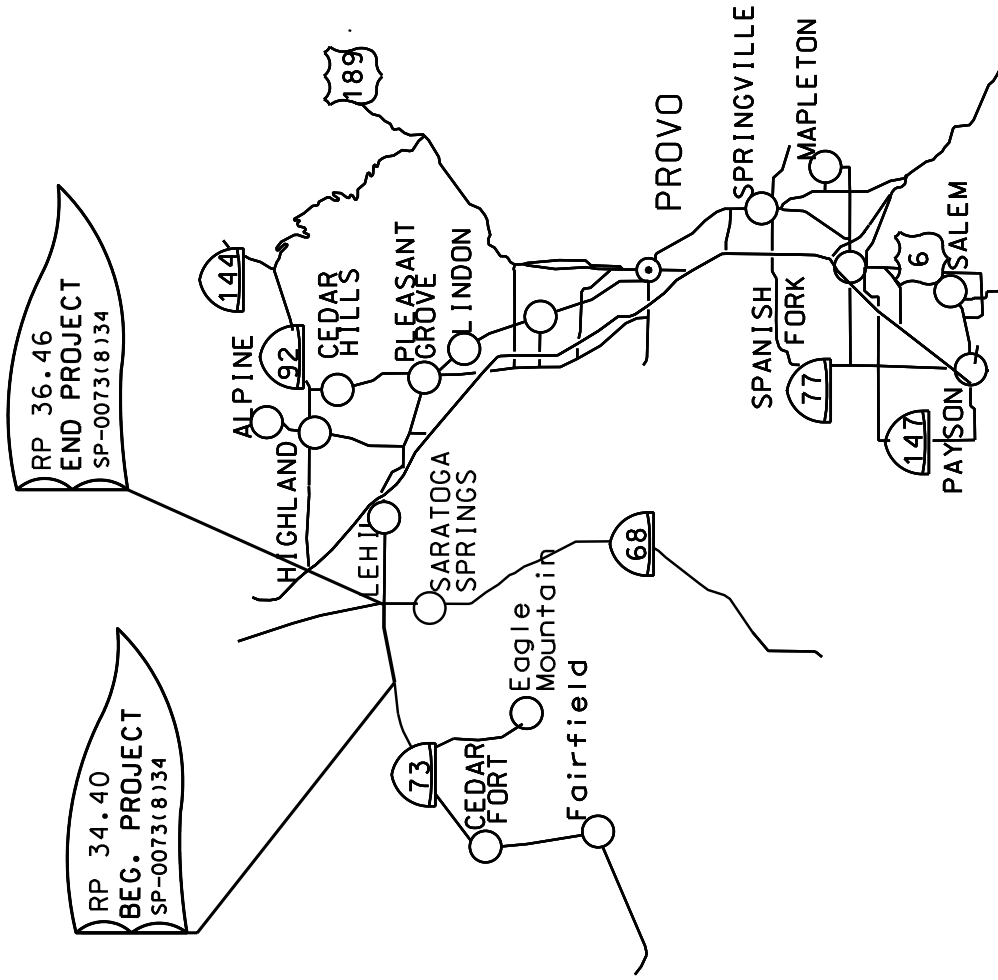
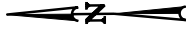
Alt Group: 0 Alt #: 0

Item Number	Description					Use Qty	Unit
02911001P	Wood Fiber Mulch (Plan Quantity)					3	Acre
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	3.0		
					<hr/> 3.0		
02912004P	Strip and Spread Topsoil (Plan Quantity)					16,500	sq yd
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	16,500.0		
					<hr/> 16,500.0		
02922001P	Drill Seed (Plan Quantity)					3	Acre
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment	
SR-73	RP 34.57	LT	RP 36.40	LT	3.0		
					<hr/> 3.0		

State-Red Book With 8 ½" x 11" Plan Sheets

XI. Location Map

UTAH COUNTY
 SR-73 PASSING LANE
 LENGTH 2.06 MILES



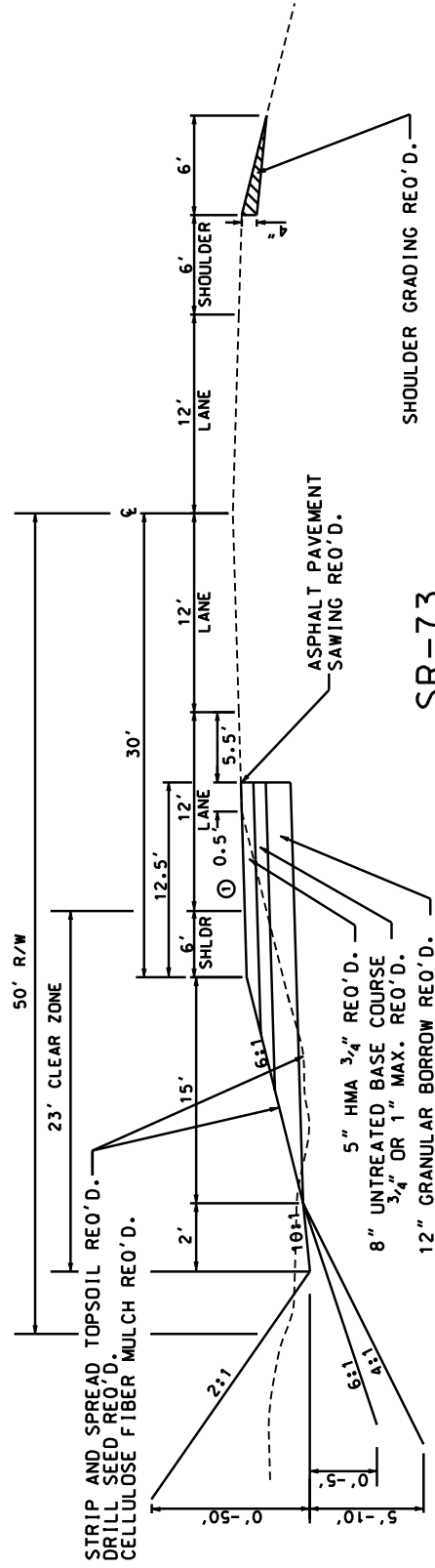
State-Red Book With 8 ½" x 11" Plan Sheets

XII. Typical Sections or Detail Sheets

[illegible]

TYPICAL NO. 1
DESIGN SPEED 65 MPH
RP 34.57 - 34.89

① MATCH EXISTING CROSS SLOPE

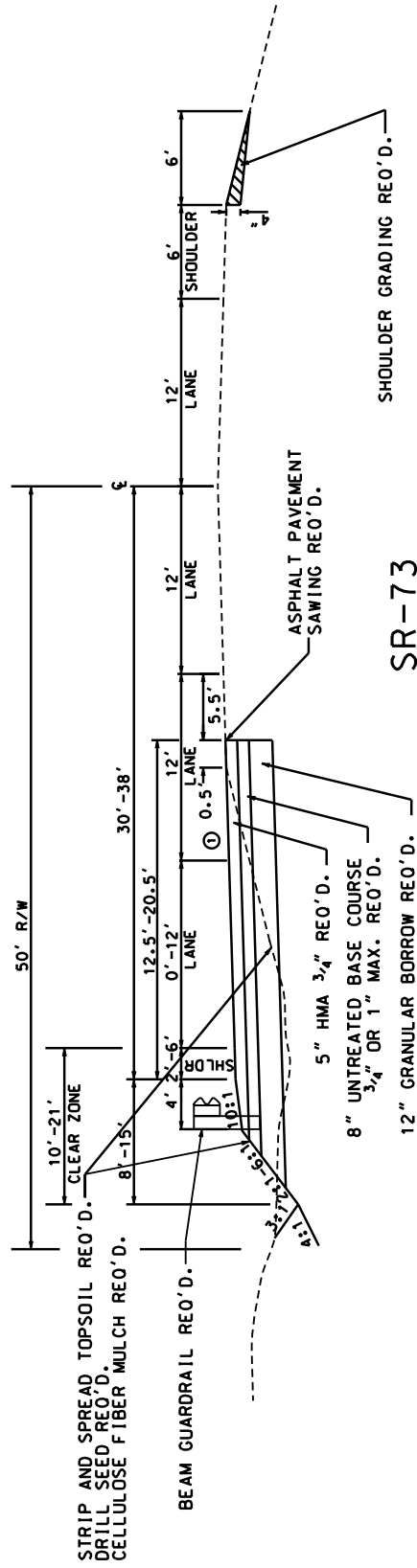


**TYPICAL NO. 2
DESIGN SPEED 65 MPH
RP 34.89 - 35.28**

3605 TS 01.dgn 04/29/2003 03:53:03 PM

**TYPICAL NO. 3
DESIGN SPEED 65 MPH
RP 35.34 - RP 35.50**

① MATCH EXISTING CROSS SLOPE



TYPICAL NO. 4
DESIGN SPEED 65 MPH
RP 35.28 - 35.34, RP 35.50 - 35.54

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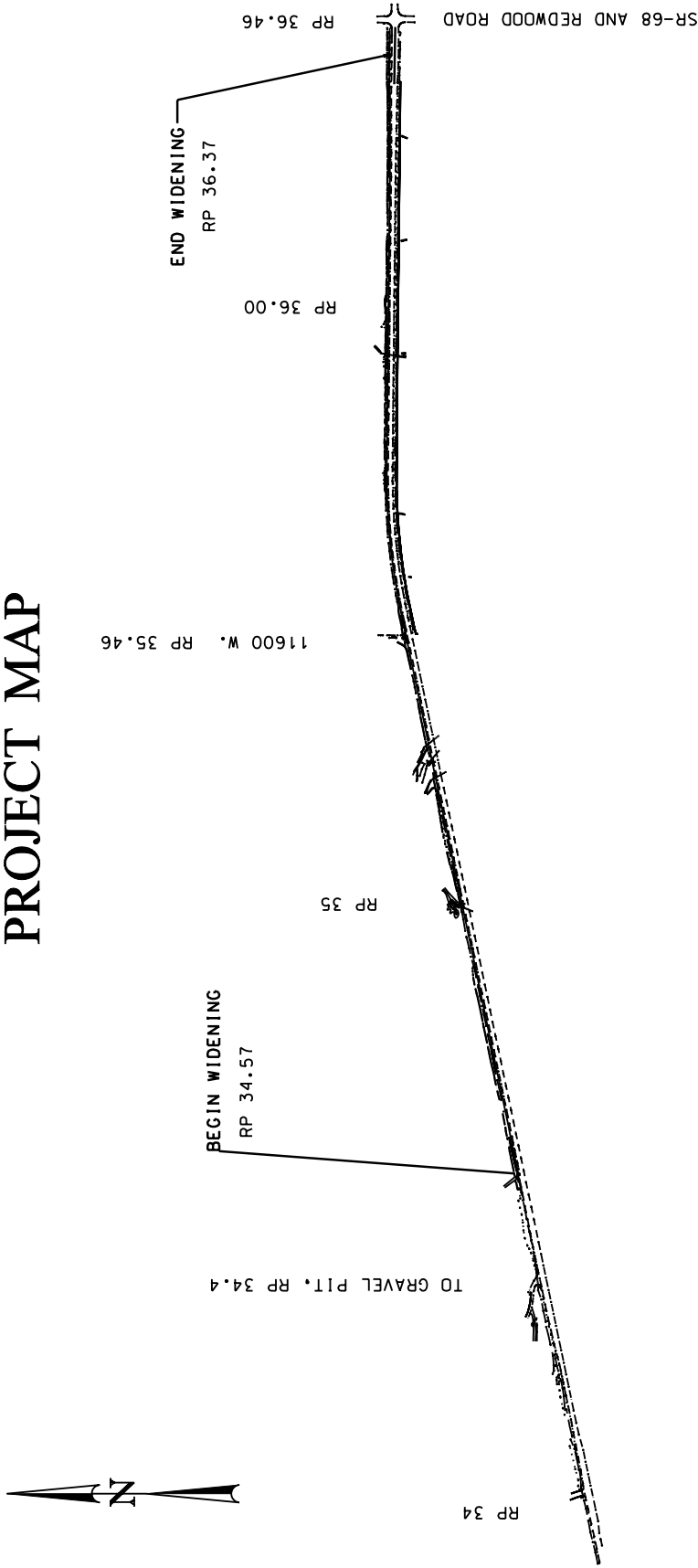
TYPICAL NO. 5
DESIGN SPEED 65 MPH
RP 35.54 - RP 36.37

① MATCH EXISTING CROSS SLOPE

UTAH COUNTY						SHEET NO.	IS-3
SR-73, RP 34 TO RP 35.						UTAH CO.	
TYPICAL SHEET						SP-0073(8)34	
PROJECT DESIGN ENGINEER		DATE	DESIGN MAP 04/03		DATE	PROJECT DESIGN ENGINEER	
CHECKED			CHECKED CH 04/03		DATE	CHECKED	
APPROVED			APPROVED MAP 04/03		DATE	APPROVED	
REGION 3 -- ORDM, UT ROADWAY DESIGN							
REVIEW							
NO.		DATE			ORIGINAL SUBMISSION FOR AUTHORIZATION		
REVISED BY		DATE			REVISIONS		
REVISIONS							

PROJECT NUMBER SP-0073(8)34		PROJECT DESIGN ENGINEER DATE _____		PROJECT DESIGN ENGINEER DATE _____	
APPROVAL DATE _____		CHECK DATE _____		CHECK DATE _____	
REGIONAL RECORDS DATE _____		CHECK DATE _____		REVIEW DATE _____	
UTAH DEPARTMENT OF TRANSPORTATION REGION 3 -- OREM, UT ROADWAY DESIGN					
SR-73, RP 34 TO RP 35. SITE PLAN UTAH CO.					
UTAH COUNTY SHEET NO. DT-1					

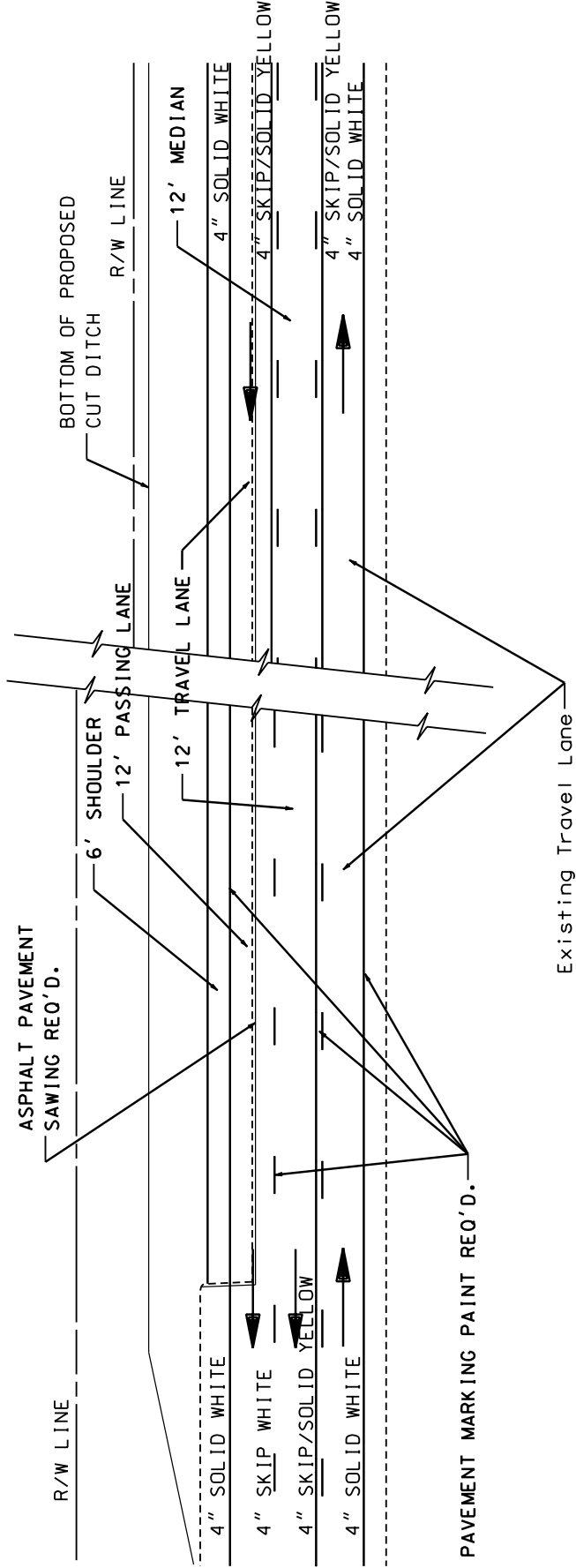
PROJECT MAP



WIDENING DETAIL

RP 34.57

RP 36.37



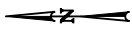
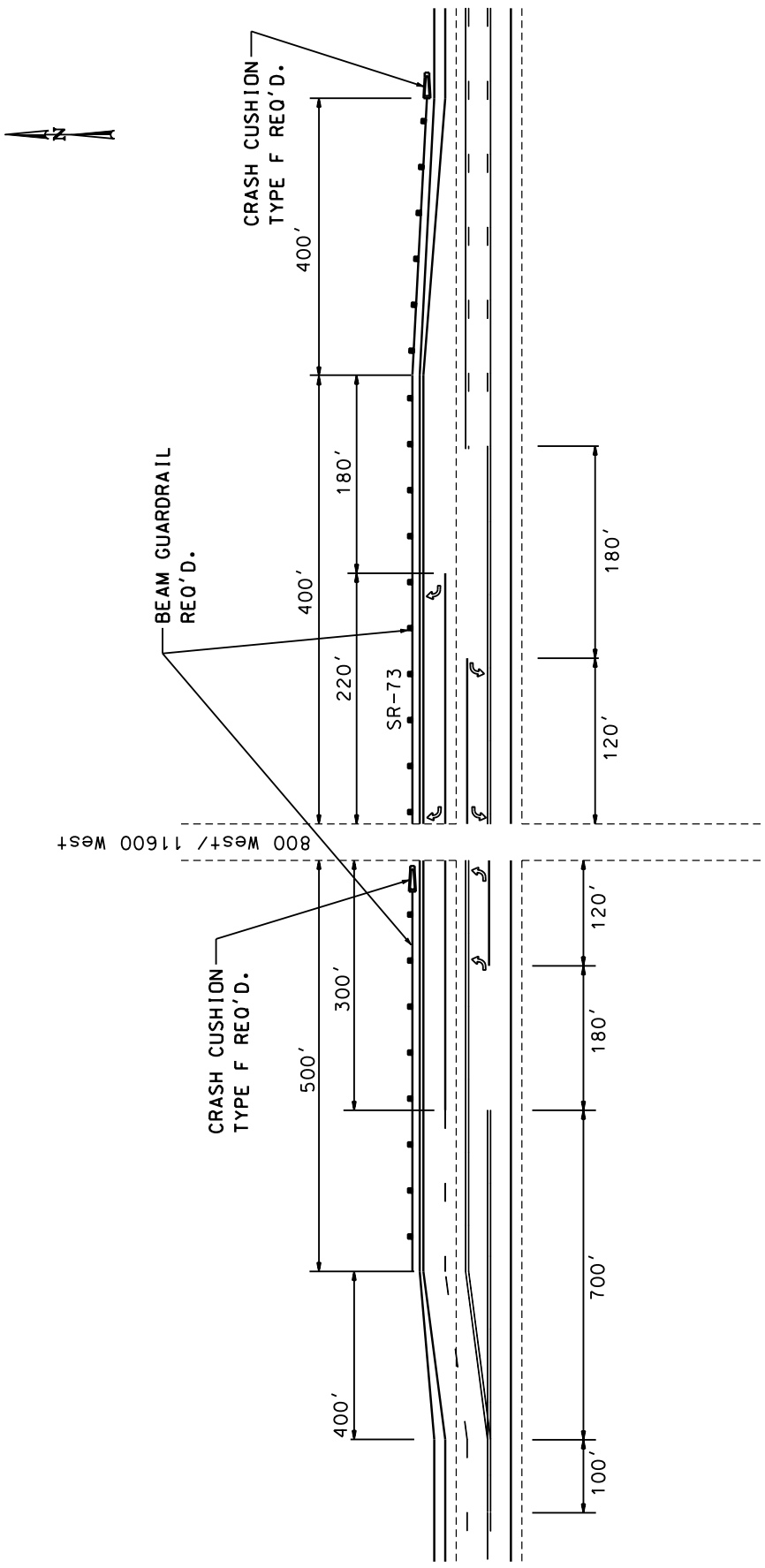
UTAH COUNTY		SHEET NO. DT-2	
PROJECT NUMBER		SR-73, RP 34 TO RP 35.	
UTAH CO		DETAIL SHEET	
DATE		SP-0073(8)34	
APPROVED	DATE	PROJECT DESIGN ENGINEER	DATE
DESIGN	DATE	DESIGN	DATE
MAP	DATE	MAP	DATE
CHECK	DATE	CHECK	DATE
CIVIL	DATE	CIVIL	DATE
REVIEW	DATE	REVIEW	DATE
UTAH DEPARTMENT OF TRANSPORTATION			
REGION 3 -- OREGON, UT			
ROADWAY DESIGN			
REVISED			
DATE			
BY			
REVISIONS			
ORIGINAL SUBMISSION FOR AUTHORIZATION			
REMARKS			

RP	DRIVEWAY	PIPE
34.57 LT	5" UTBC	24" x 35'
35.00 LT	*	5' x 35'
35.25 LT	*	7' x 35'
35.46 LT	STREET/4" ASPHALT	24" x 60'
35.70 LT	4" ASPHALT	24" x 35'
35.72 LT	4" ASPHALT	24" x 120'
35.77 LT	4" ASPHALT	18" x 35'
35.88 LT	5" UTBC	18" x 40'
35.93 LT	4" ASPHALT	24" x 35'
35.96 LT	5" UTBC	18" x 35'
36.09 LT	4" ASPHALT	24" x 105'
36.10 LT	5" UTBC	
36.25 LT	4" ASPHALT	18" x 35'
36.29 LT	4" ASPHALT	18" x 35'
36.34 LT	4" ASPHALT	18" x 45'

* INFORMATION ONLY - NO WORK REQ'D.

* INFORMATION ONLY - NO WORK REQ'D.

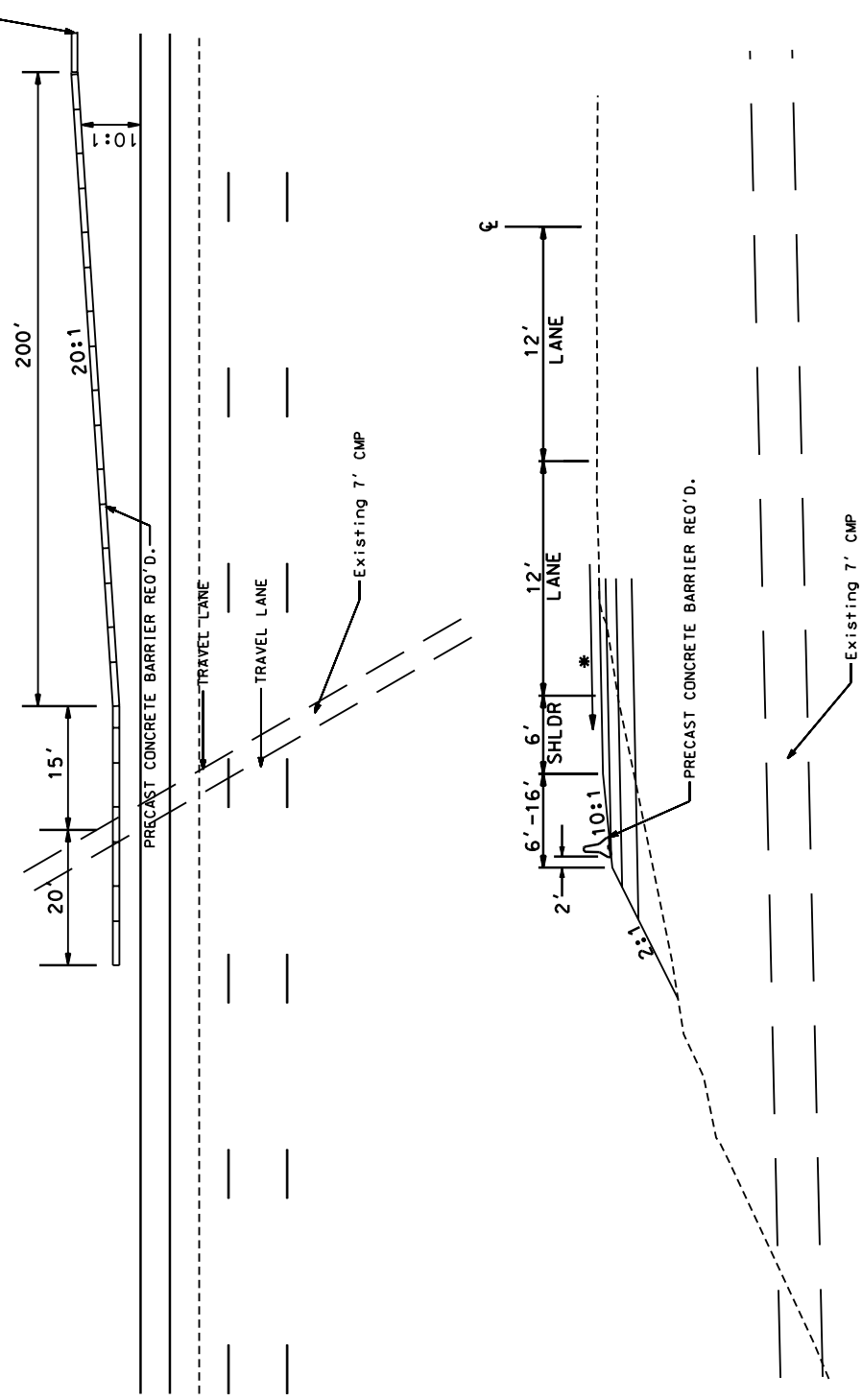
11600 WEST INTERSECTION DETAIL



UTAH DEPARTMENT OF TRANSPORTATION		REGION 3 -- OREM, UT		ROADWAY DESIGN		DESIGN MAP 02/03		CHECK C/H 02/03		DATE		APPROVED		PROJECT DESIGN ENGINEER		DATE		PROJECT		SP-0073(8)34		PROJECT NUMBER		UTAH COUNTY		SHEET NO. DI-4	
SR-73, RP 34 TO RP 35.		UTAH CO		DETAIL SHEET		DESIGN MAP 02/03		CHECK C/H 02/03		DATE		APPROVED		PROJECT DESIGN ENGINEER		DATE		PROJECT		SP-0073(8)34		PROJECT NUMBER		UTAH COUNTY		SHEET NO. DI-4	
REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS	
NO.		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS	

BARRIER DETAIL RP 35.23 LT

CRASH CUSHION TYPE F REQ'D.
(SEE STD. DWG. CC-7)
MARKER PDS AND MOUNTING
HARDWARE REQ SHEETING OR
OBJECT MARKER SHEETING OR
MARKER PLATE HARDWARE REQ'D.
(SEE STD. DWG. CC-1)



* MATCH EXISTING CROSS SLOPE

ROADWAY SEEDING SCHEDULE

GRASSES/ FORBS	SEED NAME			NUMBER SEEDS PER POUND	QUANTITY					
	SEED NO	COMMON NAME	BOTANICAL NAME		POUNDS OF PURE LIVE SEED PER ACRE	% OF MIX	SEEDS PER SQ. FT.	POUNDS OF PURE LIVE SEED PER ACRE	% OF MIX	SEEDS PER SQ. FT.
G	1	Newhy hybrid wheatgrass	Elymus hoffmannii 'Newhy'	122,000	3	19%	8	4.5	19%	13
G	2	Western wheatgrass	Pascopyrum smithii	110,000	3	19%	8	4.5	19%	11
G	3	Mountain brome	Bromus marginatus	90,000	2	13%	4	3	13%	6
G	4	Sheep fescue	Festuca ovina 'Covar'	680,000	2	13%	31	3	13%	47
F	5	Blue flax	Linum lewisii 'Appar'	293,000	3	19%	20	4.5	19%	30
F	6	Firecracker penstemon	Penstemon eatonii	600,000	3	19%	41	4.5	19%	62
TOTAL POUNDS OF PURE LIVE SEED PER ACRE					16	100%		24	100%	

SR-73, RP 34 TO RP 35.	UTAH CO.	SEEDING SCHEDULE	PROJECT NUMBER SP-007318334
UTAH COUNTY			SHEET NO. DI-7

[illegible]

XIII. STANDARD DRAWINGS INDEX

(Change Three, Dated 06/02/03)

UTAH DEPARTMENT OF TRANSPORTATION

U	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	07/03/02
	AT 2	Ramp Meter Details	07/03/02
	AT 3	Ramp Meter Sign Panel	07/03/02
	AT 4	Typical Ramp Meter Signal Head Mounting	07/03/02
	AT 5	Loop Installation	07/03/02
	AT 6	Conduit Details	07/03/02
	AT 7	Polymer-Concrete Junction Box Details	04/24/03
	AT 8	ATMS Cabinet w/120V Disconnect	07/03/02
	AT 9	ATMS Cab With Stepdown Transformer	07/03/02
	AT 10	Domed CCTV Details	07/03/02
	AT 11	CCTV Pole Detail	07/03/02
	AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	07/03/02
	AT 13	120V VMS Cab Foundation Details	07/03/02
	AT 14	Weigh In Motion Piezo Detail	07/03/02
		Barriers (BA)	
X	BA 1A	Precast Concrete Full Barrier Standard Section	12/19/02
X	BA 1B	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 2	Precast Concrete Half Barrier Standard Section	07/03/02
	BA 3	Cast In Place Constant Slope Barrier	12/19/02
X	BA 4	Beam Guardrail Hardware	07/03/02
	BA 4A	Guardrail Transition	07/03/02
X	BA 4B	Beam Guardrail Installation	12/19/02
X	BA 4C	Beam Guardrail Anchor Type I	12/19/02
	BA 5	Traffic Control Cable	07/03/02

U	NUMBER	TITLE	CURRENT DATE
		Catch Basins and Cleanouts (CB)	
	CB 1	Standard Catch Basin	07/03/02
	CB 2	Curb Inlet Catch Basin	04/24/02
	CB 3	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	07/03/02
	CB 4	Solid Cover For Standard Drawing DB 1 MS-18 Loading	07/03/02
	CB 5	Standard Screw Gate And Frame	07/03/02
	CB 6A	Standard Drop Inlet Details General Notes And Installation Detail	07/03/02
	CB 6B	Standard Catch Basin And Cleanout Box Drop Inlet Type "A" Details	07/03/02
	CB 6C	Standard Catch Basin And Cleanout Box Drop Inlet Type "B" Details	07/03/02
	CB 6D	Standard Catch Basin And Cleanout Box Drop Inlet Type "C" Details	07/03/02
	CB 6E	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6F	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6G	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Details	07/03/02
	CB 6H	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Tables	07/03/02
	CB 7	Standard Curb And Gutter Drop Inlet	07/03/02
	CB 8A	Double Catch Basin	07/03/02
	CB 8B	Double Catch Basin	07/03/02
	CB 9A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 9B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 9C	Standard Catch Basin and Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	07/03/02
	CB 9D	Standard Catch Basin and Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	07/03/02
	CB 10A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 10B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 10C	Standard Catch Basin and Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	07/03/02

U	NUMBER	TITLE	CURRENT DATE
		Crash Cushions (CC)	
X	CC 1	Crash Cushion Markings	07/03/02
	CC 2	Crash Cushion Drainage Details Guideline A	07/03/02
	CC 3	Crash Cushion Drainage Details Guideline B	07/03/02
	CC 4	Details For Placement Crash Cushions Type A, B, & D	07/03/02
	CC 5	Grading And Placement Detail Crash Cushion Type C	07/03/02
	CC 6	Crash Cushion Type E Sand Barrel Details	12/19/02
X	CC 7	Grading & Installation Details Crash Cushion Type F	04/24/03
	CC 8	Grading & Installation Details Crash Cushion Type G	04/24/03
	CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/03
	CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/03
		Diversion Boxes (DB)	
	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls and Apron Detail	07/03/02
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	07/03/02
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	07/03/02
	DB 2D	Standard Diversion Box Type "G" Hand Slide Details	07/03/02
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	07/03/02
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	07/03/02
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	07/03/02

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U	NUMBER	TITLE	CURRENT DATE
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" & "C" Details	07/03/02
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	07/03/02
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP and Up To 54" CMP	07/03/02
	DB 3C	Standard Diversion Box With Manhole Cover 48" - 72" RCP and 60" to 84" CMP	07/03/02
		Drainage (DG)	
X	DG 1	Fill Height for Metal Pipe (Steel)	07/03/02
X	DG 2	Fill Height for Metal Pipe (Aluminum)	07/03/02
X	DG 3	Maximum Fill Height and End Sections For HDPE and PVC Pipes	12/19/02
X	DG 4	Pipe Culverts Minimum Cover	12/19/02
X	DG 5	Plastic Pipe, Metal Pipe or Pipe Arch Culvert Bedding	07/03/02
X	DG 6	Precast Concrete Pipe Culvert	07/03/02
X	DG 7	Gasketed Joints or Coupling Bands for C.M.P.	07/03/02
X	DG 8	Metal Culvert End Sections	07/03/02
X	DG 9	Miscellaneous Pipe Details	07/03/02
		Environmental Controls (EN)	
X	EN 1	Temporary Erosion Control (Check Dams)	07/03/02
	EN 2	Temporary Erosion Control (Silt Fence)	04/24/03
	EN 3	Temporary Erosion Control (Slope Drain and Temporary Berm)	07/03/02
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	12/19/02
	EN 5	Temporary Erosion Control (Sediment Trap and Curb Inlet Barrier)	07/03/02
		Fence and Gates (FG)	
	FG 1A	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 1B	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 2A	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 2B	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 3	Swing Gates Type I for Gates Less Than 17'	07/03/02
	FG 4	Deer Gates	07/03/02

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U	NUMBER	TITLE	CURRENT DATE
	FG 5	Swing Gates Type II for Gates Wider Than 17'	07/03/02
	FG 6	Chain Link Fence	07/03/02
		Grates, Frames, and Trash Racks (GF)	
	GF 1	Manhole Frame And Grated Cover	07/03/02
	GF 2	Manhole Frame And Solid Cover	07/03/02
	GF 3	Rectangle Grate & Frame	07/03/02
	GF 4	Directional Flow Grate & Frame	07/03/02
	GF 5	Solid Cover & Frame	07/03/02
	GF 6	Manhole Steps	07/03/02
	GF 7	Standard Screw Grate & Frame	07/03/02
	GF 8	2' x 2' Grate & Frame	07/03/02
	GF 9	28" x 24" Directional Flow and Frame	07/03/02
	GF 10	Standard Trash Racks 90E X-ing L	07/03/02
	GF 11	Standard Trash Racks	07/03/02
	GF 12	Standard Trash Racks	07/03/02
		General Road Work (GW)	
	GW 1	Raised Median and Plowable End Section	12/19/02
	GW 2	Concrete Curb and Gutter	04/24/03
	GW 3	Concrete Curb and Gutter Details	07/03/02
	GW 4	Concrete Driveways and Sidewalks	07/03/02
	GW 5	Pedestrian Access	02/27/03
	GW 6	Right-of-Way Marker	07/03/02
	GW 7	Newspaper and Mailbox Stop Layout	07/03/02
X	GW 8	Newspaper and Mailbox Support Hardware	07/03/02
X	GW 9	Delineation Hardware	07/03/02
X	GW 10	Delineation Application	07/03/02
		Paving (PV)	
	PV 1	Joints for Highways with Concrete Traffic Lanes and Shoulders	07/03/02
	PV 2	Pavement/Approach Slab Details	12/19/02

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U	NUMBER	TITLE	CURRENT DATE
	PV 3	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 4	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 5	Urban Concrete Pavement Details	07/03/02
	PV 6	Rumble Strips	07/03/02
	PV 7	Rumble Strips - Typical Application	07/03/02
		Signals (SL)	
	SL 1	Traffic Signals Mast Arm Pole and Luminaire Extension	07/03/02
	SL 2	Traffic Signals Mast Arm Detail 25' Thru 65'	07/03/02
	SL 3	Underground Service Pedestal Details	07/03/02
	SL 4	Traffic Signals Mast Arm Pole Foundation	07/03/02
	SL 5	Breakaway Post Mounted Traffic Signal Pole	07/03/02
	SL 6	Power Source Details	07/03/02
	SL 7	Span Wire Signal Pole Detail	07/03/02
	SL 8	Signal Head Details	07/03/02
	SL 9	Pedestrian Signal Assembly	07/03/02
	SL 10	Controller Base Details	07/03/02
	SL 11	Traffic Signals Loop Detector Detail	07/03/02
	SL 12	Junction Box Details	07/03/02
	SL 13	Traffic Counting Loop Detector Detail	12/19/02
	SL 14	Light Pole Breakaway Base	07/03/02
	SL 15	Luminaire Breakaway Base Detail	07/03/02
	SL 16	Single Transformer Substation Details	07/03/02
	SL 17	Light Pole Anchor Base	07/03/02
	SL 18	Light Pole Foundation Extension	07/03/02
		Signs (SN)	
	SN 1	Bridge Load Limit Signs	07/03/02
	SN 2	Flashing School Sign	12/19/02
	SN 3	Overhead School Flasher	07/03/02
	SN 4	Flashing Stop Sign	12/19/02

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U	NUMBER	TITLE	CURRENT DATE
	SN 5	Typical Installation for Milepost Signs	12/19/02
	SN 6	Not Used	
X	SN 7	Placement of Ground Mounted Signs	07/03/02
X	SN 8	Ground Mounted Timber Sign Post (P1)	12/19/02
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	07/03/02
	SN 10	Ground Mounted Square Steel Sign Post (P3)	07/03/02
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	07/03/02
	SN 12A	Ground Mounted Sign Installation Details	07/03/02
	SN 12B	Ground Mounted Sign Installation Details	04/24/03
	SN 12C	Ground Mounted Sign Installation Details	07/03/02
		Striping (ST)	
	ST 1	Object Markers "T" Intersection & Pavement Transition Guidance	12/19/02
	ST 2	Freeway Turn Around Markings	07/03/02
X	ST 3	Typical Pavement Markings	07/03/02
X	ST 4	Crosswalks, Parking and Intersection Approaches	07/03/02
X	ST 5	Painted Median & Auxiliary Lane Details	07/03/02
	ST 6	Passing/Climbing Lanes Traffic Control	07/03/02
	ST 7	Pavement Markings & Signs at Railroad Crossing	12/19/02
	ST 8	Plowable Pavement Markers	07/03/02
		Structures and Walls (SW)	
	SW 1A	Welded End Guard Unit	07/03/02
	SW 1B	Precast Concrete Cattle Guard	07/03/02
	SW 2	Noise Wall Placement Area	07/03/02
	SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/02
	SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/02
	SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/02
	SW 4B	Precast Concrete Retaining/Noise Wall 2 of 2	07/03/02

State-Red Book With 8 ½" x 11" Plan Sheets

U	NUMBER	TITLE	CURRENT DATE
		Traffic Control (TC)	
X	TC 1A	Construction Zone Channelization Devices	07/03/02
X	TC 1B	Construction Zone Signing	07/03/02
X	TC 2A	Traffic Control General	07/03/02
X	TC 2B	Traffic Control General	07/03/02
X	TC 3	Traffic Control Project Limit Signing	07/03/02
X	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
X	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
X	TC 6	Traffic Control Pedestrian Routing	07/03/02
X	TC 7	Traffic Control Road Closed, Detour	07/03/02
X	TC 8	Traffic Control Lane Closure	07/03/02
X	TC 9	Traffic Control Multilane Closure	07/03/02
X	TC 10	Traffic Control Expressway And Freeway Crossover/Turn-Around	07/03/02
X	TC 11	Traffic Control Exit Ramp Gore	07/03/02
X	TC 12	Traffic Control Entrance Ramp Gore	07/03/02
X	TC 13	Traffic Control Shoulder-Haul Road	07/03/02
X	TC 14	Traffic Control Flagging Operation	07/03/02
X	TC 15	Traffic Control 2 Lane/ 2 Way Seal Coat With Cover Material	07/03/02
X	TC 16	Traffic Control Pavement Marking	07/03/02

XIV. Special Provisions

July 10, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 00555 M

PROSECUTION AND PROGRESS

Add the following to PART 1.12 LIMITATIONS OF OPERATIONS:

- D. Obtain the approval of the Engineer prior to the scheduling of work, and do not work during holidays or affected City celebrations unless approved by the Engineer.
- E. Maintain two-way traffic at all times. Do not restrict any lanes between the hours of 6:00 a.m. and 9:00 a.m., and between the hours of 3:00 p.m. and 7:00 p.m.
- F. Maintain a traffic control plan which will not delay traffic longer than ten minutes during any phase of construction on this project.
 - 1. A delay is defined as the total length of time any vehicle is stopped within the project limits by the Contractor.
 - 2. The Engineer will assess a penalty of \$1000.00 against the Contractor, for each hour that a traffic delay exceeding ten minutes, occurs within.
 - 3. The Engineer will document delays and review them with the Contractor as they occur.
- G. Apply temporary traffic striping prior to opening any area of roadway which has had the paint striping covered, removed, or altered for any reason.
- H. Time will be suspended when the chip & flush seal is completed, and begun again on October 1, 2003, for the final painting.

January 21, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 00725 M

SCOPE OF WORK

Add to Section 00725, Part 1: General

1.2 INTENT OF CONTRACT

B. GENERAL DESCRIPTION OF PROJECT

1. Widen roadway with truck lane throughout length of project west bound.
2. Pave widening with HMA.
3. Extend pipe culverts.
4. Chip & flush seal full width of roadway throughout project.
5. Apply traffic striping and pavement messages

C. PROJECT ROUTES & INFORMATION

1. SR-73, Length: 2.04 miles; RP 34.40 to 36.46, Eagle Mountain to SR-68.

July 10, 2003

Special Provision

SP-0073(8)34

SECTION 01315 M

PUBLIC INFORMATION SERVICES

Add to Section 01315 paragraph 1.4 C:

1. Specific local entities are as follows (list is not restricted to these entities):
 - a. Eagle Mountain Town
 - b. Saratoga Springs Town
 - c. Cedar Fort Town
 - d. Fairfield Town
 - e. Lehi City
 - f. Emergency Services (Fire and Police Departments)
 - g. Utah County Sheriff

Delete Section 01315 paragraph 1.5 D and replace with the following:

- D. Failure to provide public information services in accordance with this specification results in up to a \$10,000 weekly deduction.

Delete Section 01315 paragraph 3.1 K and replace with the following:

- K. Forward all media inquiries, written and verbal, regarding the project or project activities to the UDOT Region 3 Public Involvement Coordinator at 801.227.8006.

July 10, 2003

Special Provision

SP-0073(8)34

SECTION 01554 M

TRAFFIC CONTROL

Add to Section 01554, paragraph 1.1 Section Includes:

Portable variable message signs.

Add to Section 01554, Part 2, Products:

2.5 PORTABLE VARIABLE MESSAGE SIGN

- A. Sign panel:
 - 1. Minimum height: 6 feet
 - 2. Minimum width: 10 feet
 - 3. Minimum character height: 18 inch
 - 4. Characters: 3 rows, 8 columns
 - 5. Illumination: Active L.E.D.
 - 6. Non-reflective black finish.
- B. Circuitry control unit:
 - 1. Photoelectric cell activated by ambient light only and shielded from direct headlights.
 - 2. Must automatically dim the panel to 50 percent of rated voltage at night.
 - 3. Flash rate: Adjustable
 - 4. Update speed: 100 milliseconds.
 - 5. Legibility: 100 feet.
- C. Mounting frame on a pneumatic-tire vehicle:
 - 1. 7 feet clearance between the bottom edge of the sign and the roadway surface.
 - 2. Frame and sign panel able to withstand 80 mph sustained winds and 100 mph intermittent gusts from any direction.
 - 3. Panel capable of rotation on a horizontal axis.
- D. Power requirements:
 - 1. Emit bright, distinctive messages to traveling public for a continuous period of time of up to 24 hours per day for a period of 30 days.

Add to Section 01554, Part 3, Execution:

3.7 PORTABLE VARIABLE MESSAGE SIGN

- A. Place in view of oncoming traffic without obstructing traffic flow.
 - 1. SR-73, East bound, near the beginning project limit, RP 34.40, and West bound, near the ending project limit, RP 36.46, at the Jct. with SR-68.
 - 2. Place four calendar days prior to beginning of Rotomill operation on each road section.
- B. Program message to inform that roadway will be under construction, and give construction date and time.
- C. Get approval for the proposed location and message from the Engineer.
- D. Display message twenty-four hours a day until project construction begins.
- E. Remove variable messages signs when construction begins, and construction signs are in place.

July 10, 2003

Special Provision

SP-0073(8)34

SECTION 02221 M

REMOVE STRUCTURE AND OBSTRUCTION

Add to Section 02221, Part 3: Execution

3.18 DELINEATORS

- A. Mark locations of existing delineators, culvert markers and maintenance markers.
- B. Remove and dispose of delineator posts and hardware.

April 7, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 02610M

PIPE CULVERTS

Add the following to Part 1:

1.4 ACCEPTANCE CRITERIA

A. Pipe culverts accepted according to the criteria outlined in this section. The Engineer may require testing of any or all culverts for compliance with the criteria. The Engineer reviews and approves proposed corrections. The acceptance of pipe culvert is based on five requirements: 1) Horizontal and vertical alignment deviations; 2) Barrel distortions; 3) Damages to the pipe; 4) Joint fitting; 5) Coating integrity. Following is a description of the requirements:

1. **Horizontal and vertical alignment deviations**
Measure horizontal and vertical installation deviations from the culvert's final construction survey stakes. Do not exceed the tolerances shown on Table A of this section.
2. **Barrel distortions**
Measure load distortions along a straight line through the centerline of the pipe. Do not exceed the tolerances shown on Table A of this section.
3. **Damaged culverts**
Remove or repair pipe culverts that are irregular or distorted, have cracks, dents, holes, splits, or loose nuts or bolts. Remove all pipes with a damaged invert.
4. **Joints**
Remove all pipe culverts that have damaged joints that allow the culvert to leak. Re-install or remove all pipes that do not connect properly. Connect joints according to manufacturers recommendations. Provide a manufacturer Certificate of Compliance for the pipe joints.
5. **Coating integrity**
Repair all pipe coatings, according to manufacturer recommendations, that don't have the required thickness or that have been damaged. Provide a Manufacturer Certificate of compliance for the pipe coating.

Table - A TOLERANCES

Table - A TOLERANCES				
Alignment Tolerances			Distortions Gradual Ovaling or Elliptical	
Design Grade	Max. Line Deviation	Max. Grade Deviation	Nominal Pipe Diameter *	Maximum Distortions **
	Percent of Nominal Pipe Diameter	inch/100feet	inch	Inch
> 1 %	5	1 1/2	18	+/- 0 - 7/8
≤ 1 %	5	1	24	+/- 1 - 1/4
			30	+/- 1 - 1/2
			36	+/- 1 - 7/8
< 0.5 %		± 0.5	42	+/- 2
			48 +/-	+/- 2 - 3/8
Notes For nominal culvert diameters larger than 48 inch, use measured diameter to calculate 5 percent allowable distortion. * Maximum distortions are used to define dimensions associated with allowable pipe deflections. Measure directly or by use of a mandrel test. **				

July 10, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 02723 S

SHOULDER GRADING

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Placement, construction and compaction of materials onto roadway shoulders.

1.2 RELATED SECTIONS

- A. Section 02721: Untreated Base Course
- B. Section 02324: Compaction.

PART 2. PRODUCTS

2.1 MATERIALS

- A. ¾" or 1" Untreated Base Course

PART 3. EXECUTION

3.1 SHOULDER PREPARATION

- A. Excavate at outer asphalt shoulder, a vertical edge, key out area, and remove material as per Detail Sheet DT-2, to place shoulder material for Shoulder Grading.

3.2 PLACEMENT

- A. Place material using a mechanical device, specific to placing shoulder material, so it is placed in its final location, and using a method that assures no damage to asphalt roadway during construction.

1. Do not place material on roadway surface or shoulder and then blade into position.
2. Construct so that final finished shoulder has a uniform grade blending with the profile of the roadway, and having a uniform cross slope from the roadway, with a distinct graded appearance. A 6:1 to 10:1 cross slope is desirable.
3. Construct so that outside edge of shoulder has a neat and distinct edge.
4. Remove oversize material larger than the specified maximum size. Grade and roll again.
5. Work around existing delineators, (when not required to be removed,) or remove and replace at Contractor's expense.

3.3 COMPACTION

- A. Compact by watering and rolling a minimum of two passes with a steel drum roller. Engineer may accept compaction of final product based on visual inspection.

END OF SECTION

July 10, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 02742 S

PROJECT SPECIFIC SURFACING REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Required PG Asphalt or Emulsion
- B. Number of gyrations to use for Superpave Mix Design.

PART 2 PRODUCTS

- A. (HMA) Hot Mix Asphalt:
 - 1. PG 64-28 Asphalt. Size 3/4"
 - 2. N_{initial} 8 N_{design} 100 N_{final} 160
- B. Tack Coat
 - 1. SS1 Emulsion, 2:1 dilute
- C. Prime Coat
 - 1. MC 70 or 250 Asphalt.
- D. Chip Seal
 - 1. Type of asphalt emulsion CRS-2P

PART 3 EXECUTION

Not used.

July 10, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 02748M

PRIME COAT/TACK COAT

Delete Part 2.2.A Tack Coat, and add the following to PART 2 PRODUCTS

2.2 TACK COAT

- A. Cutback or emulsified asphalt of the type and grade called for in the bid proposal and Section 02745, at the dilution rate of two parts undiluted emulsion and one part water by the manufacturer.

June 23, 2003

SPECIAL PROVISION

SP-0073(8)34

SECTION 02765S

PAVEMENT MARKING PAINT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Furnish Acrylic Water Based pavement marking paint meeting Federal Specification TTP-1952 D and refer to 2.2 for resin requirement.
- B. Apply to hot mix asphalt or Portland cement as edge lines, center lines, broken lines, guide lines, contrast lines, symbols and other related markings.
- C. Remove pavement markings.

1.2 REFERENCES

- A. AASHTO M 247: Glass Beads Used in Traffic Paint.
- B. ASTM D 562: Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using the Stormer-Type Viscometer.
- C. ASTM E 1347: Color and Color-Difference Measurement by Tristimulus Colorimetry.
- D. ASTM D 2205: Selection of Tests for Traffic Paints.
- E. ASTM D 2743: Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.
- F. ASTM D 2805: Hiding Power of Paints by Reflectometry.
- G. ASTM D 3723: Pigment Content of Water-Emulsion Paints.
- H. ASTM D 3960: Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

- I. ASTM D 4451: Pigment Content of Paints.
- J. ASTM D 5381: X-Ray Fluorescence (XRF) Spectroscopy of Pigments and Extenders.
- K. Federal Standards 595B, 37875, 33538, 11105 and TTP-1952 D.

1.3 ACCEPTANCE

- A. Provide fixtures (ball valves, gate valves or other) on paint truck for the purposes of obtaining field samples.
- B. Agitate the paint to allow for thorough mixing. Follow paint manufacturer's recommendation for agitation and mixing times.
- C. Stop all agitation before sample is drawn.
- D. All meters on the paint truck must be calibrated annually and certified for application rate verification. Calibration tolerances for meters must be +/- 0.5 pounds per gallon. Keep a clean, legible copy of calibration report with the paint truck. Certifications performed by company personnel, meter calibration companies or UDOT Equipment Certification Unit.
- E. UDOT ENGINEER:
 - 1. Visually inspects each line to verify bead adhesion and compliance with specified line dimensions requirements.
 - 2. Verifies that the paint and beads are being applied within specified tolerances a minimum of once each production day.
 - 3. Verifies quantities used by either method:
 - a. Measuring both paint and bead tanks prior to and after application.
 - b. Witnessing the meter readings prior to and after application.
 - 4. Randomly sample each color of pavement marking paint used, minimum of one sample each per project.
 - a. Use a clean one pint metal paint can.
 - b. Sample paint immediately after the paint has been completely agitated. (Stop all agitation before drawing the sample)
 - c. Allow a minimum of 10 gallons to be applied prior to taking sample.
 - d. Fill the sample container to within ½ inch of full.
 - e. Seal the containers immediately by tightly attaching the container's lid.
 - f. Submit paint samples to Central Chemistry Lab for acceptance.
 - g. For each sample include:
 - Project Number
 - Project Name
 - Paint Manufacturer

- Batch Number
- Striping Company
- Color of Paint
- Est. Quantity
- Date Sampled
- Sampler's name

- F. Repaint any line or symbol failing to meet bead adherence and dimensional requirements.
- G. Price Reductions for Pavement Markings installed below the specified wet mil thickness are outlined in Table I.
- H. Contractor will repaint pavement markings that fail to meet the quantitative requirements of Article 2.2 Paint, at no cost to the Department.

Table I - Price Reduction for Wet Mil Thickness	
	Pay Factor
At the specified mil thickness	1.00
1-10 percent below the Specified wet mil thickness	0.75
11-15 percent below the Specified wet mil thickness	0.50
More than 15 percent below the Specified wet mil thickness	Repaint Pavement Markings

PART 2 PRODUCTS

2.1 Manufacturers

- A. Select an acrylic water based pavement marking paint manufacturer from the Accepted Products Listing (APL) maintained by the UDOT Research Division.

2.2 Paint

- A. Follow Federal Standards 595B, 37875, 33538, and 11105. Meet the following quantitative requirements for Acrylic Water Based Paint listed in Table II:

Table II - Quantitative Requirements				
Property	White	Yellow (lead free)	Black	Test
Pigment: Percent by weight	62.0 +/- 2	62.0 +/- 2	62.0 +/- 2	ASTM D 3723
Total Solids: Percent by weight, minimum	77.0	77.0	77.0	ASTM D 2205
Nonvolatile vehicle: Percent by weight vehicle, minimum*	40.0	40.0	40.0	ASTM D 2205
Viscosity, KU @ 77 degrees F	80 - 95	80 - 95	80 - 95	ASTM D 562
Volatile Organic Content(VOC): lbs/gal, maximum	1.25	1.25	1.25	ASTM D 3960
Directional Reflectance: Minimum	92.0	50.0	N/A	ASTM E 1347
Dry Opacity: Minimum (5 mils wet)	0.95	0.95	N/A	ASTM D 2805

* The binder shall be 100 percent acrylic, a minimum of 40 percent, by weight, as determined by infrared analysis and other chemical analysis available to UDOT (ASTM D 2205). Consisting of either Rohm and Haas Fastrack HD- 21A or Dow DT-400NA.

- B. Additional requirements:
1. Free of lead, chromium, or other related heavy metals ASTM D 5381.
 2. ASTM D 2743, ASTM D 4451 and ASTM D 5381: Tests used to verify paint samples meet "Accepted Products Listing."

2.3 GLASS SPHERE (BEADS) USED IN PAVEMENT MARKING PAINT

- A. Specific Properties: Meet AASHTO M 247.
 - 1. Gradation:

Passing a No. 14 sieve, percent	95 - 100
Passing a No. 16 sieve, percent	80 - 95
Passing a No. 18 sieve, percent	10 - 40
Passing a No. 20 sieve, percent	0 - 5
Passing a No. 25 sieve, percent	0 - 2
 - 2. Beads having a Silane adhesion coating.
 - 3. Roundness - The glass beads will have a minimum of 80 percent true spheres.
- B. Beads used in Temporary Pavement Markings meet AASHTO M247 Type II uniform gradation.

PART 3 EXECUTION

3.1 PREPARATION

- A. Line Control.
 - 1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.
 - 2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
 - a. Remove paint that is not placed within tolerance of the established control points and replace at no expense to the Department. Refer to article 3.4.
 - b. Maintain the line dimension within 10 percent of the width and length dimensions defined in Standard Drawings ST1 - ST8.
- B. Remove dirt, loose aggregate and other foreign material and follow manufacturer's recommendations for surface preparation.

3.2 APPLICATION

A. Apply Pavement marking paint at the following Wet mil thickness requirements.

1. 20 – 25 wet mils for all markings.

Example Calculation: (Verify wet mil thickness)

$$\text{Wet Mils} = \frac{(0.133681 \text{ ft}^3/\text{gal}) * 12000 \text{ mil/ft}}{(X \text{ ft/gal})(Z \text{ ft})}$$

Where,

X = application rate. (Meter readings or dipping tanks).

Z = line width measured in feet.

12000 = conversion from ft to mil

0.133681 = conversion from gallons to cubic feet.

For information only: Approximate application rate for required mil thickness requirements.

1. 4 inch Solid Line: From 190 to 240 ft/gal
2. 4 inch Broken Line: From 760 to 960 ft/gal
3. 8 inch Solid Line: From 95 to 120 ft/gal

- B. Refer to Table I for pavement markings that are less than 20 wet mils in thickness.
- C. No additional payment for pavement markings placed in excess of 25 wet mils in thickness or exceeding dimensional requirements outlined in Article 3.1 paragraph A.
- D. Painted Legends and Symbols 1 gallon per 80 square feet. Provide Engineer calculations of legends and symbols for pay determination.
- E. Glass Sphere (Beads): Apply a minimum of 8 lbs/gal of paint, the full length and width of line and pavement markings.
1. Do not apply glass beads to contrast lines (black paint).
- F. Begin striping operations no later than 24 hours after ordered by the Engineer.
- G. At time of application apply lines and pavement markings only when the air and pavement temperature are:
1. 50 degrees F and rising for Acrylic Water Based Paint.
- H. Comply with Traffic Control Drawing TC-16

3.3 CONTRACTOR QUALITY CONTROL

- A. Application Rate: Verify that the paint and beads are being applied within specified tolerances prior to striping.
- B. Curing: Protect the markings until dry or cured. In the event that the uncured marking is damaged the marking will be reapplied and track marks left on the pavement will be removed at no additional cost to the Department.

3.4 REMOVE PAVEMENT MARKINGS

- A. Use one of these removal methods:
 - 1. Grinding
 - 2. High pressure water spray
 - 3. Sand blasting
 - 4. Shot blasting.
- B. Do not eliminate or obscure existing striping, in lieu of removal, by covering with black paint or any other covering material.
- C. Use equipment specifically designed for removal of pavement marking material.

END OF SECTION